

Work Order ID 163154

Thursday, June 22, 2017 10:15:11 AM

163154

Page 1

Item ID: D135-751-011

Accept

N900040100

Setup Start *NS1*

Revision ID:

Stop *NS2*

Item Name: Skidtube with Standard Wearplates Fits LH or RH

Start Date: 6/22/2017 Start Qty: 1.00 *1*

Cust Item ID:

Required Date: 7/5/2017 Req'd Qty: 1.00 *1*

Customer:

Reference:

Approvals: Process Plan: DAS 21 Date: JUN 22 2017

Tooling:

Date:

Run Start *NR1*

QC: 9-89

Date:

SPC (Y/N):

Date:

Stop *NR2*

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
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Draw Nbr	Revision Nbr
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D3507	Rev D
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DSI 9661	A
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AUG 24 2017

100

Document Control

0.00

100

DOCUMENT CONTROL

DC

Memo

0.10

Doc.Control -USB or Paperwork

Photocopy bluefile & type labels per PPP D135-751-011 CHG002

DAS
28
9-89

AUG 29 2017

B163154

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐																																																											
Date :		Step #:		QTY Effective :				MRB (QSI042) Approval																																																							
Description Work Order Deviation				Disposition				Completed By Lead hand / Supervisor Approval Verification QC / QA Coordinator Approval																																																							
Root Cause		FAULT CATEGORY																																																													
Environment ☐	No Re-verification ☐	Pressure/Forced ☐	Temperature/Cure ☐	Power Loss/Surge ☐	Positioned Wrong ☐	Design ☐	Operator ☐	Bending ☐	Set-up ☐	Folio/Program ☐	Outside Dimensions ☐	Doc/Data ☐	Offset/Setup ☐	Centre Not Concentric ☐	BOM/Route ☐	Grain ☐	Over/Under tolerance ☐	Equip/Tooling ☐	Supplier ☐	Cracks ☐	Broken/Damage/Defect ☐	Weld ☐	Part Incorrect ☐	Handling/Pre ☐	Training ☐	Crimp/Kink/Ripple/Wave ☐	Inspection Incomplete/Unqualified ☐	Wrong Stock Pulled ☐	Part Lost/Missing ☐	Material ☐	Use for Testing ☐	Cuffs ☐	Contamination ☐	Out of Sequence ☐	Part Moved ☐	Internal Transport ☐	Poor Information ☐	Crushing ☐	Countersink ☐	Off-set ☐	Drawing ☐	Tribal Knowledge ☐	Rushing ☐	Heat Treat ☐	Cut Too Short ☐	Mislabeled ☐	Finish ☐	LOA ☐	Product Improvement ☐	Wave/Twist in Tube ☐	Instructions Incomplete/Unclear ☐	Fit/Function ☐	Misread ☐	Substation ☐	Process Improvement ☐	Marks/Chatter ☐	Drill Holes ☐	Misaligned/off center ☐	Turning Sequence ☐	Past Expiry Date ☐	Manufacturing Process ☐	OTHER : ☐	
Misidentified ☐	Past Due ☐																																																														

Work Order ID 163154

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Item ID: D135-751-011 Accept ***N900040100*** Setup Start ***NS1***
Revision ID: Stop ***NS2***
Item Name: Skidtube with Standard Wearplates Fits LH or RH
Start Date: 6/22/2017 Start Qty: 1.00 ***1*** Cust Item ID:
Required Date: 7/5/2017 Req'd Qty: 1.00 ***1*** Customer:
Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____ Run Start ***NR1***
QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
120	Skidtubes	0.00							
120									
Skidtubes	Memo	1.09							
Skidtubes	1-Cut Aft end as per dwg D3507 2-Deburr ends 3-Drill Aft & Fwd Cap holes using DT8678 & DT8901 4-Locate DT8870 & Drill Ground wire hole on top of Tube. 6-Locate DT8870 with #30 cleco in Ground wire hole ,then Pilot Drill all X-Bolt holes using #30" drill. ****DO NOT OPEN AFT CAP HOLES**** 7-Open crossbolt holes to 0.3125" (3 per side). Drill pilot holes for wearplates using Dt8868,Use DT8892 FOR REAR WEARPLATE HOLES. 8-Open six rear wearplate holes using DT8892.Open all wearplate holes to 0.297" 9-Open ground wire hole .297" section E-E 10-Open Aft & Fwd Cap holes using .208" drill. 11-Bore out aft end of tube as per Dwg D3507 & Detail "B". 12- Section G-G holes must be laid out manually, open to #30. 13-Deburr holes.								
140	QC5- Inspect part completeness to step on W/O	0.00							
140									
QC	Memo	0.02							
Quality Control									

DAS
38
9-89
JUN 27 2017

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :			MRB (QSI042) Approval		
Description Work Order Deviation				Disposition				Completed By Lead hand / Supervisor Approval Verification QC / QA Coordinator Approval	
Root Cause		FAULT CATEGORY							
Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐	No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐	Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐	Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐	Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Misabeled ☐ Fit/Function ☐ Misaligned/off center ☐	Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐	OTHER : _____			

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DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐																																																													
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Misidentified ☐	Past Due ☐																																																																

Work Order ID 163154

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page 4

Item ID: D135-751-011

Accept

N900040100

Setup Start *NS

Revision ID:

Stop *NS

Item Name: Skidtube with Standard Wearplates Fits LH or RH

Start Date: 6/22/2017 Start Qty: 1.00

1

Cust Item ID:

Required Date: 7/5/2017 Req'd Qty: 1.00

1

Customer:

Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____
QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Run Start *NF
Stop *NF

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number
170	Skidtubes	0.00						
170								
Skidtubes		0.87						
Skidtubes	Memo							
	1-Open X-Bolt holes to .375" (1 Places) & .500" (2 Places) as per Dwg D3507. and section G-G to .750" (2 places)							
	2-Counter Sink X-BOLT holes as per Dwg D3507							
	3-Deburr and blow out chips from inside of tube.							
	4-Bond web as per Dwg D3507 & QSI 015							
	A/R 241 Sike Flex Batch: <u>137526</u>							
	Exp Date: <u>18-04-21</u>							
	start time: _____							
	end time: _____							
	5-Weld x-bolt spacers as per Dwg D3507 and Detail C-C & D-D and G-G							
	A/R AL ROD Batch: <u>M136158</u>							
	6-Grind welds flush							
	7-Drill Rivet Holes as per Dwg D3507 Using Dt8871A&B							
	8-Deburr Rivet holes.							

> BE1707-06

> BE17-07-06

> BE1707-14

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :			MRB (QSI042) Approval		
Description Work Order Deviation				Disposition				Completed By	
								Lead hand / Supervisor Approval Verification	
								QC / QA Coordinator Approval	
Root Cause		FAULT CATEGORY							
Environment ☐	No Re-verification ☐	Pressure/Forced ☐	Temperature/Cure ☐	Power Loss/Surge ☐	Positioned Wrong ☐				
Design ☐	Operator ☐	Bending ☐	Set-up ☐	Folio/Program ☐	Outside Dimensions ☐				
Doc/Data ☐	Offset/Setup ☐	Centre Not Concentric ☐	BOM/Route ☐	Grain ☐	Over/Under tolerance ☐				
Equip/Tooling ☐	Supplier ☐	Cracks ☐	Broken/Damage/Defect ☐	Weld ☐	Part Incorrect ☐				
Handling/Pre ☐	Training ☐	Crimp/Kink/Ripple/Wave ☐	Inspection Incomplete/Unqualified ☐	Wrong Stock Pulled ☐	Part Lost/Missing ☐				
Material ☐	Use for Testing ☐	Cuffs ☐	Contamination ☐	Out of Sequence ☐	Part Moved ☐				
Internal Transport ☐	Poor Information ☐	Crushing ☐	Countersink ☐	Off-set ☐	Drawing ☐				
Tribal Knowledge ☐	Rushing ☐	Heat Treat ☐	Cut Too Short ☐	Mislabeled ☐	Finish ☐				
LOA ☐	Product Improvement ☐	Wave/Twist in Tube ☐	Instructions Incomplete/Unclear ☐	Fit/Function ☐	Misread ☐				
Substation ☐	Process Improvement ☐	Marks/Chatter ☐	Drill Holes ☐	Misaligned/off center ☐	Turning Sequence ☐				
Past Expiry Date ☐	Manufacturing Process ☐								
Misidentified ☐	Past Due ☐	OTHER : ☐							

Work Order ID 163154

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Item ID: D135-751-011

Accept

N900040100Setup Start ***NS1***

Revision ID:

Stop ***NS2***

Item Name: Skidtube with Standard Wearplates Fits LH or RH

Start Date: 6/22/2017 Start Qty: 1.00 ***1***

Cust Item ID:

Required Date: 7/5/2017 Req'd Qty: 1.00 ***1***

Customer:

Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Run Start ***NR1***

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
180 *180* QC Quality Control	QC10- Inspect visual per QSI004- ground welds Memo	0.00 0.00				1			DAS 38 9-89 JUL 14 2017
185 *185* HandFinish Hand Finishing	Touch up alodine Memo RE-ALODINE ONLY	0.00 1.57				(X1)	0		2017/07/25 BE-13
187 *187* QC Quality Control	QC7-Inspect Chemical Conversion Coat Memo	0.00 0.00				1	0		BE 17-07-25

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

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Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐																																																													
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Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐	No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐	Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐	Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐	Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Misabeled ☐ Fit/Function ☐ Misaligned/off center ☐	Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐				
OTHER : ☐									

Work Order ID 163154

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Item ID: D135-751-011 Accept ***N900040100*** Setup Start ***NS1***
 Revision ID: Stop ***NS2***
 Item Name: Skidtube with Standard Wearplates Fits LH or RH
 Start Date: 6/22/2017 Start Qty: 1.00 ***1*** Cust Item ID:
 Required Date: 7/5/2017 Req'd Qty: 1.00 ***1*** Customer:
 Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____ Run Start ***NR1***
 QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
220	Spray Painting per QSI005 4.2	0.00							
220									
SprayPaint	Memo	0.40							
Spray Painting	1- Apply Primer as per QSI 005 4.2.1 3.3 and dwg A/R Primer Batch: <u>137195</u>								
	2- Paint two coats of White paint as per QSI 005 4.2 and dwg A/R Paint Batch: <u>138058</u>								
230	QC14- Inspect Spray Paint	0.00							
230									
QC	Memo	0.10							
Quality Control									

START 9.30
 FINISH 10.30
 START 11.30
 FINISH 12.30

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DQA: _____ Date: _____



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Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
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Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐	No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐	Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐	Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐	Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Misabeled ☐ Fit/Function ☐ Misaligned/off center ☐	Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐				
OTHER : ☐									

Work Order ID 163154

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Item ID: D135-751-011 Accept ***N900040100*** Setup Start ***NS1***
Revision ID: Stop ***NS2***
Item Name: Skidtube with Standard Wearplates Fits LH or RH
Start Date: 6/22/2017 Start Qty: 1.00 ***1*** Cust Item ID:
Required Date: 7/5/2017 Req'd Qty: 1.00 ***1*** Customer:
Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____ Run Start ***NR1***
QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
260	Assemble as per dwg	0.00							
260	HandFinishing								
Hand Finishing	Memo	1.36							
	1- Install Wearplate &Ground Wire inserts as per Dwg D3507.								
	1-Inspect for Foreign objects								
	2-Install Fwd & Aft caps as per Dwg D3507 And Detail "A" & "B"								
	A/R 241 Sika Flex Batch: <u>M1137946</u>								
	Exp Date: <u>18103</u>								
	3-Install Wearplates as per Dwg D3507 ,								
	Note:Install (1) Bolt and (1) washer on Ground Wire insert on top of tube								
	Do not Install Screws where indicated on Dwg(Note #6)								
	A/R 241 Sika Flex Batch: <u>M1136986</u>								
	Exp Date: <u>18103</u>								
	4-assemble o'ring to plug as per dwg D3492 and apply o'ring lube								
	A/R 55-o'ring lube batch: <u>M1135471</u>								
	5- Wing Walk as per Dwg D3507 and QSI 005 4.4								
	Batch: <u>M4132777</u>								

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RTU 598 M113794 18103

DQA: _____ Date: _____

WORK ORDER NON-CONFORMANCE / UPDATE



QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐																																																											
Date :		Step #:		QTY Effective :				MRB (QSI042) Approval																																																							
Description Work Order Deviation				Disposition				Completed By Lead hand / Supervisor Approval Verification QC / QA Coordinator Approval																																																							
Root Cause		FAULT CATEGORY																																																													
Environment ☐	No Re-verification ☐	Pressure/Forced ☐	Temperature/Cure ☐	Power Loss/Surge ☐	Positioned Wrong ☐	Design ☐	Operator ☐	Bending ☐	Set-up ☐	Folio/Program ☐	Outside Dimensions ☐	Doc/Data ☐	Offset/Setup ☐	Centre Not Concentric ☐	BOM/Route ☐	Grain ☐	Over/Under tolerance ☐	Equip/Tooling ☐	Supplier ☐	Cracks ☐	Broken/Damage/Defect ☐	Weld ☐	Part Incorrect ☐	Handling/Pre ☐	Training ☐	Crimp/Kink/Ripple/Wave ☐	Inspection Incomplete/Unqualified ☐	Wrong Stock Pulled ☐	Part Lost/Missing ☐	Material ☐	Use for Testing ☐	Cuffs ☐	Contamination ☐	Out of Sequence ☐	Part Moved ☐	Internal Transport ☐	Poor Information ☐	Crushing ☐	Countersink ☐	Off-set ☐	Drawing ☐	Tribal Knowledge ☐	Rushing ☐	Heat Treat ☐	Cut Too Short ☐	Mislabeled ☐	Finish ☐	LOA ☐	Product Improvement ☐	Wave/Twist in Tube ☐	Instructions Incomplete/Unclear ☐	Fit/Function ☐	Misread ☐	Substation ☐	Process Improvement ☐	Marks/Chatter ☐	Drill Holes ☐	Misaligned/off center ☐	Turning Sequence ☐	Past Expiry Date ☐	Manufacturing Process ☐	OTHER :	
Misidentified ☐	Past Due ☐																																																														

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Setup Start *NS1*

Stop *NS2*

Cust Item ID:

Customer:

Reference:

Approvals: **Process Plan:** _____ **Date:** _____ **Tooling:** _____ **Date:** _____ **Run** **Start** ***NR1***
 QC: _____ **Date:** _____ **SPC (Y/N):** _____ **Date:** _____ **Stop** ***NR2***

[illegible]

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐																																																													
Date :		Step #:		QTY Effective :				MRB (QSI042) Approval																																																									
Description Work Order Deviation				Disposition				Completed By Lead hand / Supervisor Approval Verification QC / QA Coordinator Approval																																																									
Root Cause		FAULT CATEGORY																																																															
Environment ☐	No Re-verification ☐	Pressure/Forced ☐	Temperature/Cure ☐	Power Loss/Surge ☐	Positioned Wrong ☐	Design ☐	Operator ☐	Bending ☐	Set-up ☐	Folio/Program ☐	Outside Dimensions ☐	Doc/Data ☐	Offset/Setup ☐	Centre Not Concentric ☐	BOM/Route ☐	Grain ☐	Over/Under tolerance ☐	Equip/Tooling ☐	Supplier ☐	Cracks ☐	Broken/Damage/Defect ☐	Weld ☐	Part Incorrect ☐	Handling/Pre ☐	Training ☐	Crimp/Kink/Ripple/Wave ☐	Inspection Incomplete/Unqualified ☐	Wrong Stock Pulled ☐	Part Lost/Missing ☐	Material ☐	Use for Testing ☐	Cuffs ☐	Contamination ☐	Out of Sequence ☐	Part Moved ☐	Internal Transport ☐	Poor Information ☐	Crushing ☐	Countersink ☐	Off-set ☐	Drawing ☐	Tribal Knowledge ☐	Rushing ☐	Heat Treat ☐	Cut Too Short ☐	Mislabeled ☐	Finish ☐	LOA ☐	Product Improvement ☐	Wave/Twist in Tube ☐	Instructions Incomplete/Unclear ☐	Fit/Function ☐	Misread ☐	Substation ☐	Process Improvement ☐	Marks/Chatter ☐	Drill Holes ☐	Misaligned/off center ☐	Turning Sequence ☐	Past Expiry Date ☐	Manufacturing Process ☐	OTHER :			
Misidentified ☐	Past Due ☐																																																																

Work Order ID 163154

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163154

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Item ID: D135-751-011**Accept*****N900040100*****Setup Start *NS1*****Revision ID:****Stop *NS2*****Item Name:** Skidtube with Standard Wearplates Fits LH or RH**Start Date:** 6/22/2017 **Start Qty:** 1.00 ***1*****Cust Item ID:****Required Date:** 7/5/2017 **Req'd Qty:** 1.00 ***1*****Customer:****Reference:****Approvals:** **Process Plan:** _____ **Date:** _____ **Tooling:** _____ **Date:** _____**Run Start *NR1*****QC:** _____ **Date:** _____ **SPC (Y/N):** _____ **Date:** _____**Stop *NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
300	Identify as per dwg & Stock Location: _____	0.00							
300	Packaging								
Packaging	Memo	0.00							
Packaging	Identify and pack for shipping as per PPP D135-751-011								
	Location: _____								
	PPP Rev: _____								
	<i>fg 083</i>								
	<i>Viste PMA - FAA - FAI</i>								
	<i>50132177</i>								
310	QC21 - Final Inspection - Work Order Release	0.00							
310									
QC	Memo	0.10							
Quality Control									

DAS
27
9-89

AUG 29 2017

17/9/16
W 17.08.29

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :				MRB (QSI042) Approval 	
Description Work Order Deviation				Disposition					
								Completed By	
								Lead hand / Supervisor Approval Verification	
								QC / QA Coordinator Approval	

Root Cause			FAULT CATEGORY							
Environment ☐	☐	No Re-verification	☐	Pressure/Forced	☐	Temperature/Cure	☐	Power Loss/Surge	☐	Positioned Wrong
Design ☐	☐	Operator	☐	Bending	☐	Set-up	☐	Folio/Program	☐	Outside Dimensions
Doc/Data ☐	☐	Offset/Setup	☐	Centre Not Concentric	☐	BOM/Route	☐	Grain	☐	Over/Under tolerance
Equip/Tooling ☐	☐	Supplier	☐	Cracks	☐	Broken/Damage/Defect	☐	Weld	☐	Part Incorrect
Handling/Pre ☐	☐	Training	☐	Crimp/Kink/Ripple/Wave	☐	Inspection Incomplete/Unqualified	☐	Wrong Stock Pulled	☐	Part Lost/Missing
Material ☐	☐	Use for Testing	☐	Cuffs	☐	Contamination	☐	Out of Sequence	☐	Part Moved
Internal Transport ☐	☐	Poor Information	☐	Crushing	☐	Countersink	☐	Off-set	☐	Drawing
Tribal Knowledge ☐	☐	Rushing	☐	Heat Treat	☐	Cut Too Short	☐	Mislabeled	☐	Finish
LOA ☐	☐	Product Improvement	☐	Wave/Twist in Tube	☐	Instructions Incomplete/Unclear	☐	Fit/Function	☐	Misread
Substation ☐	☐	Process Improvement	☐	Marks/Chatter	☐	Drill Holes	☐	Misaligned/off center	☐	Turning Sequence
Past Expiry Date ☐	☐	Manufacturing Process	OTHER :							
Misidentified ☐	☐	Past Due								

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Page 1

Work Order ID: 163154

163154

Parent Item: D135-751-011

D135-751-011

Parent Item Name: Skidtube with Standard Wearplates Fits LH or RH

Start Date: 6/22/2017

Required Date: 7/5/2017

Start Qty: 1.00

Required Qty: 1.00

Comments:

IPP Rev:A06-06-21New Issue JLM
 IPP Rev:B 06-12-18 As per Rev B JLM
 IPP Rev:C 07-12-11 ECN 1036 as per revB DD
 IPP Rev D 08.11.04 Added DT9431 to sequence 5 EC verf DD IPP Rev E
 10.02.22 per pAR 09-043 EC verified by: DD IPP Rev:F 10.06.09
 remove seq110 DD verf:EC IPP Rev G 10.09.17 added
 D3507-1-bent EC verified by:DD IPP REV:H 13.12.11 ECN13-619/
 CHG002 DD VERF:JLM

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
D3507-1-BENT *D3507-1-BENT* Skidtube Assembly EC135		Manufactured	No			120	Each	3.0000	1	1			
									**			BE17-06-23	
				<u>Location</u>		<u>Loc Qty</u>		<u>Loc Code</u>					
				LG002		3							
				153822		1							
				154475		2							
D3504-1 *D3504-1* Crossbolt Spacer		Manufactured	No			170	Each	18.0000	2	2			
									**			BE17-07-13	
				<u>Location</u>		<u>Loc Qty</u>		<u>Loc Code</u>					
				LG001		18							
				153788		18							
D3504-3 *D3504-3* Crossbolt Spacer		Manufactured	No			170	Each	41.0000	1	1			
									**			BE17-07-13	
				<u>Location</u>		<u>Loc Qty</u>		<u>Loc Code</u>					
				LG001		41							
				105604		41							

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :			MRB (QSI042) Approval		
Description Work Order Deviation				Disposition				Completed By	
								Lead hand / Supervisor Approval Verification	
								QC / QA Coordinator Approval	
Root Cause		FAULT CATEGORY							
Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐	No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐	Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐	Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐	Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Mislabeled ☐ Fit/Function ☐ Misaligned/off center ☐	Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐				
OTHER : ☐									

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Work Order ID: 163154

163154

Parent Item: D135-751-011

D135-751-011

Parent Item Name: Skidtube with Standard Wearplates Fits LH or RH

Start Date: 6/22/2017

Required Date: 7/5/2017

Start Qty: 1.00

Required Qty: 1.00

D3504-5

Manufactured No

170

Each

22.0000

2

2

D3504-5

Crossbolt Spacer

**

86170713

Location

Loc Qty

Loc Code

LG

1

131473

1

LG001

21

153745

21

D3505-1

Manufactured No

170

Each

9.0000

1

1

D3505-1

Web

**

86170706

Location

Loc Qty

Loc Code

LG002

9

142243

3

162975

6

D3506-1

Manufactured No

190

Each

33.0000

4

4

D3506-1

Doubler

**

86170725

Location

Loc Qty

Loc Code

LG001

33

131475

4

153525

29

D3506-3

Manufactured No

190

Each

36.0000

2

2

D3506-3

Doubler

**

86170725

Location

Loc Qty

Loc Code

LG001

36

131165

7

131267

29

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Work Order ID: 163154

163154

Parent Item: D135-751-011

D135-751-011

Parent Item Name: Skidtube with Standard Wearplates Fits LH or RH

Start Date: 6/22/2017

Required Date: 7/5/2017

Start Qty: 1.00

Required Qty: 1.00

MS20601-AD4W3

Purchased

No

190

Each

520.0000

12

12

MS20601-AD4W3

**

BE1707-25

Rivet

Location

Loc Qty

Loc Code

CCK004

200

m137820

200

LG001

60

m137459

60

ST308

260

m137361

60

m137587

200

4

8

ALS4-1032-225

AELS8-1032-225

Purchased

No

260

Each

2,629.000

1

1

ALS4-1032-225

**

17/07/22

Rivnut

Location

Loc Qty

Loc Code

FG

25

M134975

20

M135998

5

FP001

2204

M135603

40

M135920

38

M135998

2115

M136265

11

ST556

400

M136579

400

X1

Picklist Print

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Work Order ID: 163154

163154

Parent Item: D135-751-011

D135-751-011

Parent Item Name: Skidtube with Standard Wearplates Fits LH or RH

Start Date: 6/22/2017

Required Date: 7/5/2017

Start Qty: 1.00

Required Qty: 1.00

ALS7-1032-130

AELS8-1032-130

Purchased

No

260

Each

2,069.000

38

38

AI S7-1032-130 *

**

Rivnut

ALS4-1032-130

Location

Loc Qty

Loc Code

FG

100

M128649

50

M136048

50

FP001

1959

M128649

155

M136579

1804

ST556

10

M136048

10

AN3C4A

Purchased

No

260

Each

808.0000

31

31

AN3C4A

**

Bolt

Location

Loc Qty

Loc Code

FG

20

I22814

20

FP001

153

M136450

23

M136740

8

M136986

20

M137075

43

M137164

2

M137361

57

OVER002

600

M137507

150

M137587

250

M137820

200

ST350

35

M135704

35

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Work Order ID: 163154

163154

Parent Item: D135-751-011

D135-751-011

Parent Item Name: Skidtube with Standard Wearplates Fits LH or RH

Start Date: 6/22/2017

Required Date: 7/5/2017

Start Qty: 1.00

Required Qty: 1.00

AN3C5A

Purchased

No

260

Each

928.0000

2

2

AN3C5A

Bolt

**

all 17/07/22

Location

Loc Qty

Loc Code

FG

5

M137463

122800

5

x2

FP001

657

M137361

657

OVER002

200

M137710

200

ST350

66

M135442

66

AN526C1032R10

Purchased

No

260

Each

121.0000

2

2

AN526C1032R10

Screw

**

all 17/07/22

Location

Loc Qty

Loc Code

FP001

21

m135133

21

x2

ST327

100

m137851

100

D2965

Manufactured

No

260

Each

33.0000

1

1

D2965

Cap

**

all 17/07/20

Location

Loc Qty

Loc Code

FP001

33

127852

33

x1

Picklist Print

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Work Order ID: 163154

163154

Parent Item: D135-751-011

D135-751-011

Parent Item Name: Skidtube with Standard Wearplates Fits LH or RH

Start Date: 6/22/2017

Required Date: 7/5/2017

Start Qty: 1.00

Required Qty: 1.00

D2965-3 Manufactured No 260 Each 68.0000 1 1

D2965-3

Cap

**

all 12/07/27

Location

Loc Qty

Loc Code

FP001

68

126369

68

x1

D3492-1

Manufactured No

260 Each

144.0000

4

4

D3492-1

Plug

**

all 12/07/27

Location

Loc Qty

Loc Code

FP001

144

B164127

x4

158389

1

159298

63

161306

80

D3492-3

Manufactured No

260 Each

218.0000

4

4

D3492-3

Plug

**

all 12/07/27

Location

Loc Qty

Loc Code

FP001

218

B159296

x4

159296

136

162347

82

D3492-7

Manufactured No

260 Each

65.0000

2

2

D3492-7

Plug

**

all 12/07/27

Location

Loc Qty

Loc Code

FP001

65

106110

65

x2

Picklist Print

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Work Order ID: 163154

163154

Parent Item: D135-751-011

D135-751-011

Parent Item Name: Skidtube with Standard Wearplates Fits LH or RH

Start Date: 6/22/2017

Required Date: 7/5/2017

Start Qty: 1.00

Required Qty: 1.00

D4918-047

Manufactured No

260

Each

14.0000

1

1

D4918-047

Wearplate Aft

**

all 12/03/27

Location

Loc Qty

Loc Code

FP002

14

143787

3

160786

11

X1

D4918-1

Manufactured No

260

Each

8.0000

1

1

D4918-1

Wearplate Fwd

**

all 12/03/27

Location

Loc Qty

Loc Code

FP002

8

161994

8

X1

D4918-3

Manufactured No

260

Each

8.0000

1

1

D4918-3

Wearplate Center Fwd

**

all 12/03/27

Location

Loc Qty

Loc Code

FP002

8

161898

8

X1

D4918-5

Manufactured No

260

Each

8.0000

1

1

D4918-5

Wearplate Center Aft

**

all 12/03/27

Location

Loc Qty

Loc Code

FP002

8

162010

8

X1

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Work Order ID: 163154

163154

Parent Item: D135-751-011

D135-751-011

Parent Item Name: Skidtube with Standard Wearplates Fits LH or RH

Start Date: 6/22/2017

Required Date: 7/5/2017

Start Qty: 1.00

Required Qty: 1.00

NAS1149C0332R

Purchased

No

260

Each

4,974.000

33

33

NAS1149C0332R

WASHER

**

all 12/02/22

Location

Loc Qty

Loc Code

FP001

1470

m137597

1470

GA

508

m133284

22

m136444

486

ST260a

2000

m135408

0

m136741

0

m137851

2000

ST266

996

m137381

996

11137981

x33

NAS1611-007

Purchased

No

260

Each

296.0000

2

2

NAS1611-007

O-RING

**

all 17/02/22

Location

Loc Qty

Loc Code

FP001

296

103697

296

NAS1611-010

Purchased

No

260

Each

203.0000

4

4

NAS1611-010

O-RING

**

all 12/02/22

Location

Loc Qty

Loc Code

FP001

203

m134955

7

m135603

8

m136182

4

m136836

84

m137587

100

11137963

x4

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Work Order ID: 163154

163154

Parent Item: D135-751-011

D135-751-011

Parent Item Name: Skidtube with Standard Wearplates Fits LH or RH

Start Date: 6/22/2017

Required Date: 7/5/2017

Start Qty: 1.00

Required Qty: 1.00

NAS1611-013

Purchased

No

260

Each

174.0000

4

4

NAS1611-013

O-Ring

**

del bl.

Location

Loc Qty

Loc Code

FP001

174

14137963

x 4

m137333

174

AN3C4A

Purchased

No

280

Each

808.0000

8

8

AN3C4A

Bolt

**

Location

Loc Qty

Loc Code

FG

20

I22814

20

FP001

153

M138238

8

AUG 25 2017

M136450

23

M136740

8

M136986

20

M137075

43

M137164

2

M137361

57

OVER002

600

M137507

150

M137587

250

M137820

200

ST350

35

M135704

35

D3512-041

Manufactured

No

280

Each

8.0000

2

2

D3512-041

Wearplate

**

AUG 29 2017

DAS 6 9-89

DAS 27 9-89

Location

Loc Qty

Loc Code

ST610

8

161911

8

163360

DAS 28 9-89

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Work Order ID: 163154

163154

Parent Item: D135-751-011

D135-751-011

Parent Item Name: Skidtube with Standard Wearplates Fits LH or RH

Start Date: 6/22/2017

Required Date: 7/5/2017

Start Qty: 1.00

Required Qty: 1.00

NAS1149C0332R

Purchased

No

280

Each

4,974.000

8

8

NAS1149C0332R

WASHER

DAS
28
9-89

Location

Loc Qty

Loc Code

FP001

1470

m137597

1470

GA

508

m133284

22

m136444

486

ST260a

2000

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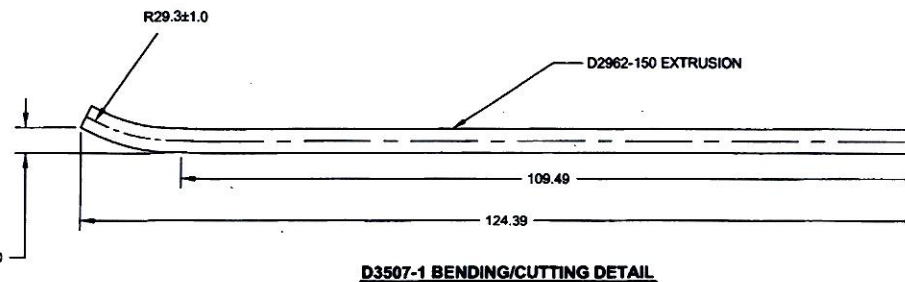
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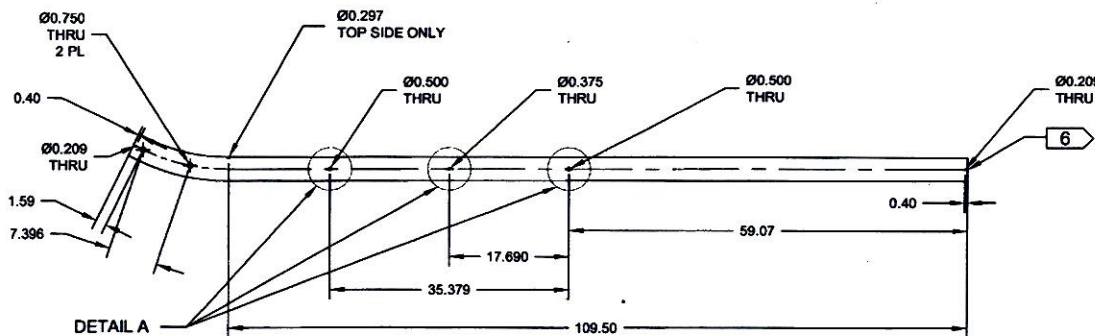
8

Qty	Part Number	Description
X	D3507-041	SKIDTUBE ASSEMBLY
1	D2962-150	EXTRUSION
1	D2965	CAP
1	D2965-3	CAP
4	D3492-041	PLUG ASSEMBLY
4	D3492-043	PLUG ASSEMBLY
2	D3492-047	PLUG ASSEMBLY
2	D3504-1	CROSS BOLT SPACER
1	D3504-3	CROSS BOLT SPACER
2	D3504-5	CROSS BOLT SPACER
1	D3505-1	WEB
4	D3506-1	DOUBLER
2	D3508-3	DOUBLER
1	D4918-1	WEARPLATE
1	D4918-3	WEARPLATE
1	D4918-5	WEARPLATE
1	D4918-047	WEARPLATE
38	AELS-1032-130	INSERT
1	AELS-1032-225	INSERT
31	AN3C4A	BOLT
2	AN3C5A	BOLT
2	AN526C1032-10	SCREW
33	AN960C10L	WASHER
12	MS20601AD4W3	RIVET

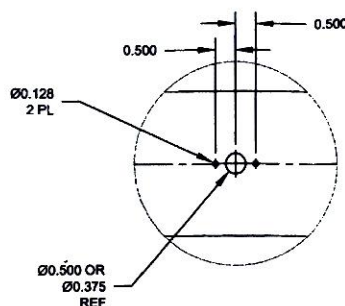
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WITHOUT NOTICE
WORK ORDER
NO. 163154 MJS
170622



D3507-1 BENDING/CUTTING DETAIL



D3507-1 DRILLING DETAIL



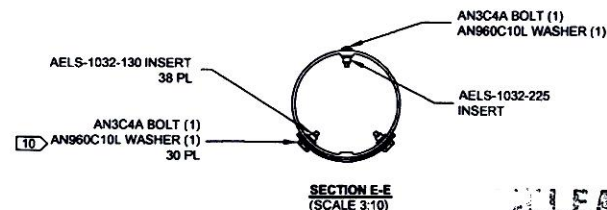
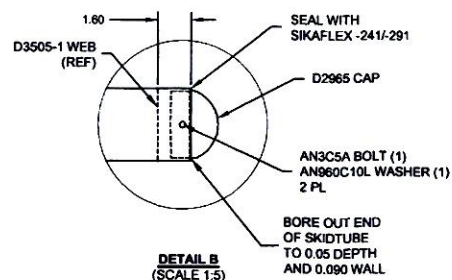
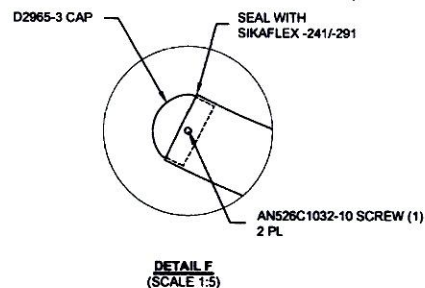
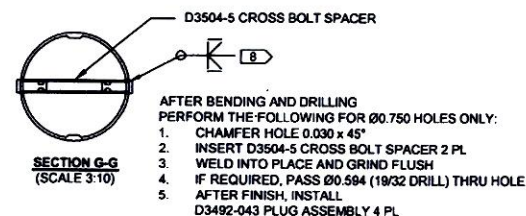
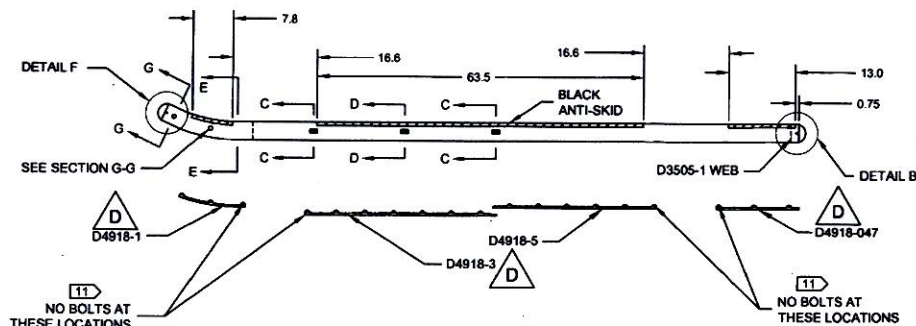
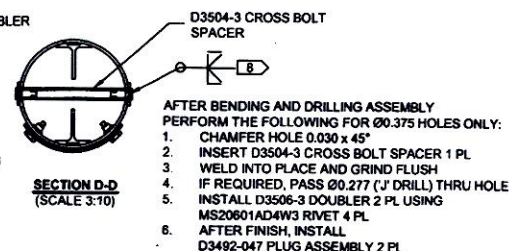
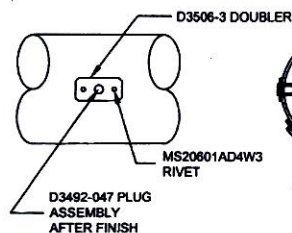
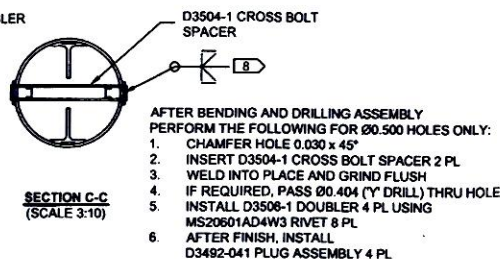
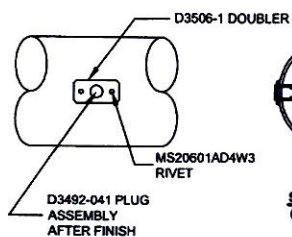
DETAIL A
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SCALE 3:10

GENERAL NOTES:

- 1) MATERIAL: N/A
- 2) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1 PRIOR TO INSERTING D3505-1 WEB.
STANDARD: PRIME (REF. 4.2.1.3.3) AND PAINT WHITE PER DART QSI 005 4.2.
OPTIONAL: POWDER COAT WHITE (REF 4.3.5.1) PER DART QSI 005 4.3.
BLACK ANTI-SKID PAINT AS INDICATED TO 1.00 ABOVE CENTERLINE PER DART QSI 005 4.4 (OPTIONAL)
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) DIMENSIONS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: IDENTIFY WITH DART B/N PER DART QSI 044 6.4 (VIBRATING STYLUS) ON I.D. OF TUBE.
- 7) WEIGHT: 24.1 LB (FROM IIN-D135-751)
- 8) WELDING TO BE DONE PER DART QSI 004
- 9) INSERT D3505-1 WEB TO LOCATION SHOWN OFF AFT END OF SKIDTUBE AND BOND WEB INTO OUTER TUBE WITH NON-STRUCTURAL SIKAFLEX-241/291 ADHESIVE PER DART QSI 015 AFTER BENDING
- 10) USE DART DRILL TEMPLATE DT8888 TO LOCATE AND DRILL Ø0.297 HOLES (38 PLACES) FOR WEARSHOE INSERTS. INSTALL AELS-1032-130 PER SECTION C-C (38 PLACES) AFTER FINISH. SEAL WEARPLATE BOLTS WITH SIKAFLEX-241/291.
- 11) DO NOT INSTALL AN3C4A BOLTS AND AN960C10L WASHERS IN INDICATED LOCATIONS

D	REMOVE D3558-X GASKETS, D4918-X WAS D3508-X REVISE FINISH TO ADD PAINT AS THE PREFERRED FINISH. REVISED NOTES	DW	13.08.30
C	ADD D3504-5, FOR SKID GEAR DEFLECTOR; CHANGE FWD CAP BOLT TO AN526C1032-10 SCREW	DC	07.09.19
B	ADD GASKET, CHANGE HARDWARE MATL	PH	06.11.01
A	NEW ISSUE	PH	06.04.21
REV.	DESCRIPTION	BY	DATE
DESIGN	DW	DART AEROSPACE USA, INC KENT, WA	
DRAWN	DW		
CHECKED	JP		
MFG. APPR.	JP		
APPROVED	JP		
DE APPR.	JP	DRAWING NO. D3507	
DATE	13.08.30	TITLE EC 135 SKIDTUBE	
		REV. D SHEET 1 OF 2 SCALE NTS	

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CHECKED	GP	DRAWING NO.	REV. D
MFG. APPR.		D3507	SHEET 2 OF 2
APPROVED		TITLE	SCALE
DE APPR.		EC 135 SKIDTUBE	NTS
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RELEASED
2013-12-10

DART SERVICE INSTRUCTION

TO AMEND INSTALLATION INSTRUCTIONS IIN-D135-751 REV. C
AND INSTRUCTIONS FOR CONTINUED AIRWORTHINESS ICA-D135-751 REV. 2

REF. FAA STC: SR01709SE

REF. EASA STC: EASA.IM.R.S.01278

PURPOSE:

THE D135-751-043 WEARPLATE KIT AT CHG 002 CONTAINS WEARPLATES WITH AN IMPROVED WEAR PATTERN AND A COATING THAT ELIMINATES THE NEED FOR THE RUBBER GASKETS. THE D135-751-011 SKIDTUBE INSTALLATION AT CHG 002 AND D135-751-041 REPLACEMENT SKIDTUBE AT CHG 002 CONTAIN THE NEW WEARPLATES.

THE DSI 9661-011 WEARPLATE UPGRADE KIT IS AVAILABLE TO UPGRADE EXISTING D135-751-011 KITS AT CHG 001 WITH IMPROVED AFT WEARPLATES.

CHANGE:

FOR D135-751-011/-041/-043 KITS AT CHG 002, THE WEARPLATE INSTALLATION PROCEDURE OF ICA-D135-751 SECTION 32.3 IS REVISED AS FOLLOWS. IF INSTALLING THE DSI 9661-011 WEARPLATE UPGRADE KIT, THE PARTS SHOULD BE INSTALLED USING THE FOLLOWING INSTRUCTION.

32.3 WEARPLATE REPLACEMENT

IF REINSTALLING D3508-X WEARPLATES ON D135-751-011/-041 KITS AT CHG 001, THE WEARPLATES SHOULD BE INSTALLED WITH D3558-X GASKETS PER ICA-D135-751 REV. 2. FOR D135-751-011/-041/-043 KITS AT CHG 002, THE WEARPLATES SHOULD BE INSTALLED WITHOUT GASKETS, AS INDICATED BELOW. IF D4918-X WEARPLATES ARE BEING INSTALLED ON D135-751-011/-041 SKIDTUBES AT CHG 001, THEY SHOULD LIKEWISE BE INSTALLED WITHOUT GASKETS AS INDICATED BELOW.

- 32.3.1 REMOVE WEARPLATES AND GASKETS (IF PRESENT) BY REMOVING THE AN3C BOLTS THAT SECURE THEM TO THE BOTTOM OF THE SKIDTUBE.
- 32.3.2 CHECK FOR CORROSION AND MECHANICAL DAMAGE IN ACCORDANCE TO CHAPTER 5 AND REPAIR AS REQUIRED. REFINISH BOTTOM OF SKIDTUBE PER CHAPTER 5 OF ICA-D135-751.
- 32.3.3 INSTALL REPLACEMENT D4918-1/-3/-5/-047 WEARPLATES USING AN3C BOLTS AS APPLICABLE AS SHOWN IN FIGURE 1 OF THIS SERVICE INSTALLATION. INSTALL (QTY 2) D3512-041 WEARPLATES (ITEM 27) OVER FWD AND AFT CLAMPS AS SHOWN IN FIGURE 1 USING AN3C BOLTS AND AN960C10L WASHERS. TORQUE BOLTS 15-25 IN-LB (1.7-2.8 N-m). SEAL WEARPLATE INSERTS USING SIKAFLEX-241/-291 OR PROSEAL 890 MIL-S-8802 CLASS B2 SEALANT.

WEIGHT AND BALANCE:

USE THE FOLLOWING WEIGHT AND BALANCE INFORMATION FOR DART D135-751-011 SKIDTUBE INSTALLATION AT CHG 002.

INSTALLATION	WEIGHT	LATERAL		LONGITUDINAL	
		ARM	MOMENT	ARM	MOMENT
D135-751-011 CHG 002 Skidtube Installation	24.5 lb 11.2 kg	±39.4 in ±1.0 m	±966 in-lb ±11.2 m-kG	147.1 in 3.7 m	3604 in-lb 41.5 m-kG

A	NEW ISSUE	DW	13.08.21
REV.	DESCRIPTION	BY	DATE
DESIGN	DW	DART AEROSPACE USA, INC KENT, WA	
DRAWN	DW		
CHECKED	<i>UP</i>	DRAWING NO.	REV. A
MFG. APPR.	<i>N/A</i>	DSI 9661	SHEET 1 OF 3
APPROVED	<i>[Signature]</i>	TITLE	SCALE
DE APPR.	<i>[Signature]</i>	REVISED WEARPLATE KIT	NTS
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PARTS LIST:

THE PARTS LISTS IN SECTION 32.9 OF ICA-D135-751 (PAGE 35) AND SECTION 5.0 OF IIN-D135-751 (PAGE 11) ARE AMENDED AS FOLLOWS FOR D135-751-011 @ CHG 002 AND LATER.

32.9 PARTS LIST (ICA-D135-751)**5.0 PARTS LIST (IIN-D135-751)**

Item	QTY -011	QTY -041	QTY -043	PART NUMBER	DESCRIPTION
	X			D135-751-011	SKIDTUBE INSTALLATION
	1	X		D135-751-041	REPLACEMENT SKIDTUBE
			X	D135-751-043	WEARPLATE KIT

IS:

20A	1		1	D4918-1	WEARPLATE (REPLACES D3508-1)
21A	1		1	D4918-3	WEARPLATE (REPLACES D3508-3)
22A	1		1	D4918-5	WEARPLATE (REPLACES D3508-5)
23A	1		1	D4918-047	WEARPLATE (REPLACES D3508-7)
27	2		2	D3512-041	WEARPLATE (REPLACES D3512-1)

WAS:

20A	1		1	D3508-1	WEARPLATE
20B	1		1	D3558-1	GASKET
21A	1		1	D3508-3	WEARPLATE
21B	1		1	D3558-3	GASKET
22A	1		1	D3508-5	WEARPLATE
22B	1		1	D3558-5	GASKET
23A	1		1	D3508-7	WEARPLATE
23B	1		1	D3558-7	GASKET
27	2		2	D3512-1	WEARPLATE

THE PARTS LIST FOR THE DSI 9661-011 KIT IS AS FOLLOWS:

QTY -011	PART NUMBER	DESCRIPTION
X	DSI 9661-011	WEARPLATE UPGRADE KIT
1	D4918-047	WEARPLATE
2	D3512-041	WEARPLATE

DESIGN	DW	DART AEROSPACE USA, INC KENT, WA	
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CHECKED	<i>GP</i>	DRAWING NO.	REV. A
MFG. APPR.	<i>N/A</i>	DSI 9661	SHEET 2 OF 3
APPROVED	<i>[Signature]</i>	TITLE	SCALE
DE APPR.	<i>[Signature]</i>	REVISED WEARPLATE KIT	NTS
DATE 13.08.21		COPYRIGHT © 2013 BY DART AEROSPACE USA, INC THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE USA, INC.	

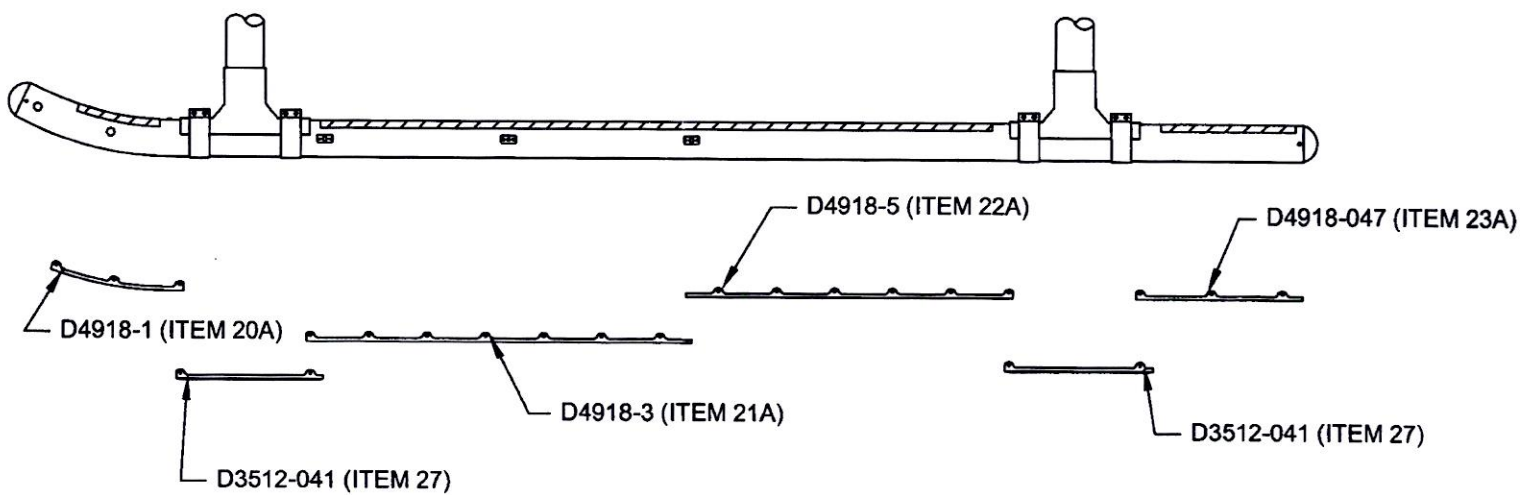


FIGURE 1: WEARPLATE INSTALLATION

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MFG. APPR.	N/A		
APPROVED	<i>[Signature]</i>		
DE APPR.	<i>[Signature]</i>	TITLE REVISED WEARPLATE KIT	
DATE	13.08.21	DRAWING NO. DSI 9661	
		REV. A SHEET 3 OF 3	
		SCALE NTS	

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5.0 PARTS LIST

Item	Qty -011	Qty -041	Qty -043	Qty -101	Part Number	Description
	X				D135-751-011	SKIDTUBE INSTALLATION
	1	X			D135-751-041	REPLACEMENT SKIDTUBE
			X		D135-751-043	WEARPLATE KIT
				X	D135-751-101	SKIDTUBE EXTENSION KIT
1		1			D3507-041	SKIDTUBE ASSEMBLY
2	4				**BRS8-96/48SZ-M8-W2	CLAMP
3	8				**LN9038-08032	SCREW
4		1			*D2965	CAP
5		1			*D2965-3	CAP
6		2			***AELS-1032-130	INSERT
7		2			***AELS-1032-225	INSERT
8		2			*AN3C5A	BOLT
9		2			*AN960C10L	WASHER
10		2			*AN526C1032-10	SCREW
20A		1	1		*D3508-1	WEARPLATE
20B		1	1		*D3558-1	GASKET
21A		1	1		*D3508-3	WEARPLATE
21B		1	1		*D3558-3	GASKET
22A		1	1		*D3508-5	WEARPLATE
22B		1	1		*D3558-5	GASKET
23A		1	1		*D3508-7	WEARPLATE
23B		1	1		*D3558-7	GASKET
24		38			*AELS-1032-130	INSERT
25	8	30	38		*AN3C4A	BOLT
26	8	30	38		*AN960C10L	WASHER
27	2		2		D3512-1	WEARPLATE
30		1			*AELS-1032-225	INSERT
31		1			*AN3C4A	BOLT
32		1			*AN960C10L	WASHER
40		4			*D3492-041	PLUG ASSEMBLY
41		4			***NAS1611-010	O-RING
42		2			*D3492-047	PLUG ASSEMBLY
43		2			***NAS1611-007	O-RING
44		4			*D3506-1	DOUBLER
45		8			*MS20601AD4W3	RIVET
46		2			*D3506-3	DOUBLER
47		4			*MS20601AD4W3	RIVET
48		4			*D3492-043	PLUG ASSEMBLY
49		4			***NAS1611-013	O-RING
50				1	D3510-041	INSERT ASSEMBLY
51				2	***AELS-1032-130	INSERT
52				6	***AELS-1032-225	INSERT
53				2	***ALS4-428-165	INSERT
54				2	AN4C7A	BOLT
55				2	AN960C416L	WASHER
56				2	AN3C4A	BOLT
57				8	AN3C7A	BOLT
58				10	AN960C10L	WASHER

* PART IS INCLUDED WITH D3507-041 SKIDTUBE ASSEMBLY

** TO BE SUPPLIED BY CUSTOMER, LISTED AS REFERENCE ONLY

*** DENOTES PART IS INCLUDED WITH ASSEMBLY ABOVE

PARTS LIST:

THE PARTS LISTS IN SECTION 32.9 OF ICA-D135-751 (PAGE 35) AND SECTION 5.0 OF IIN-D135-751 (PAGE 11) ARE AMENDED AS FOLLOWS FOR D135-751-011 @ CHG 002 AND LATER.

32.9 PARTS LIST (ICA-D135-751)

5.0 PARTS LIST (IIN-D135-751)

Item	QTY -011	QTY -041	QTY -043	PART NUMBER	DESCRIPTION
	X			D135-751-011	SKIDTUBE INSTALLATION
	1	X		D135-751-041	REPLACEMENT SKIDTUBE
			X	D135-751-043	WEARPLATE KIT

IS:

20A	1		1	D4918-1	WEARPLATE (REPLACES D3508-1)
21A	1		1	D4918-3	WEARPLATE (REPLACES D3508-3)
22A	1		1	D4918-5	WEARPLATE (REPLACES D3508-5)
23A	1		1	D4918-047	WEARPLATE (REPLACES D3508-7)
27	2		2	D3512-041	WEARPLATE (REPLACES D3512-1)

WAS:

20A	1		1	D3508-1	WEARPLATE
20B	1		1	D3558-1	GASKET
21A	1		1	D3508-3	WEARPLATE
21B	1		1	D3558-3	GASKET
22A	1		1	D3508-5	WEARPLATE
22B	1		1	D3558-5	GASKET
23A	1		1	D3508-7	WEARPLATE
23B	1		1	D3558-7	GASKET
27	2		2	D3512-1	WEARPLATE

THE PARTS LIST FOR THE DSI 9661-011 KIT IS AS FOLLOWS:

QTY -011	PART NUMBER	DESCRIPTION
X	DSI 9661-011	WEARPLATE UPGRADE KIT
1	D4918-047	WEARPLATE
2	D3512-041	WEARPLATE

DESIGN	DW	DART AEROSPACE USA, INC KENT, WA	
DRAWN	DW		
CHECKED	<i>UP</i>	DRAWING NO.	REV. A
MFG. APPR.	<i>N/A</i>	DSI 9661	SHEET 2 OF 3
APPROVED	<i>[Signature]</i>	TITLE	SCALE
DE APPR.	<i>[Signature]</i>	REVISED WEARPLATE KIT	NTS
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Work Order ID 163154

Thursday, June 22, 2017 10:15:11 AM

163154

Page 1

Item ID: D135-751-011

Accept

N900040100Setup Start ***NS1***

Revision ID:

Item Name: Skidtube with Standard Wearplates Fits LH or RH

Stop ***NS2***Start Date: 6/22/2017 Start Qty: 1.00 ***1***

Cust Item ID:

Required Date: 7/5/2017 Req'd Qty: 1.00 ***1***

Customer:

Reference:

Approvals: Process Plan: DAS Date: JUN 22 2017 Tooling: _____ Date: _____
QC: DAS Date: _____ SPC (Y/N): _____ Date: _____

Run Start ***NR1***Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
Draw Nbr	Revision Nbr	sw AUG 24 2017							
D3507	Rev D								
DSI 9661	A								
100	Document Control	0.00							
100	DOCUMENT CONTROL								
DC	Memo	0.10							
Doc.Control -USB or Paperwork		Photocopy bluefile & type labels per PPP D135-751-011	CHG002						

DAS
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9-89

AUG 29 2017

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